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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,119	12/27/2000	Anders Hultgren	2466-81	4163

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EXAMINER

LI, ZHUO H

ART UNIT	PAPER NUMBER
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2186

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/748,119

Applicant(s)

HULTGREN, ANDERS

Examiner

Zhuo H Li

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 November 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-36 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/8/2004.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Amendment*

1. This Office action is in response to the amendment filed 11/8/2004.

### *Priority*

2. Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, the PCT application upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for claims 1-36 of this application. In this case, a copy of PCT/SE99/01050 is required to be submitted in order to determine the earlier effective filing date of the present application.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 4-11, 13-15, 17, 19, 21-22, 24-26, 28-31 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Humphrey (US PAT. 5,987,233) in view of Adrangi (US PAT. 6,651,141).

Regarding claim 1, Humphrey discloses a data communication network (20, figure 2), i.e., Internet broadcasting system, comprising at least two cache servers (25-25c, figure 2) to

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which users are connected, characterized by a forecast server (22, figure 2) connected to the at least two cache servers (col. 4 line 55 through col. 5 line 10). Humphrey differs from the claimed invention in not specifically teaches the forecast server being able to issue a forecast on which data in the at least two cache server that should be replaced with other data in order to increase the hit rate in the at least two cache servers. However, Adrangi teaches a network system (200, figure 2) comprising a plurality of clients and intermediate point of presences (POP) nodes (230-234, figure 2), a plurality of edge and a plurality of data center which are connected via the network (210, figure 2), in addition, the network system further comprising a cache medium (640, figure 7) which storing the most updated, or popularity value cache content with its corresponding priority popular list, and the cache medium are periodically compared with the popularity values based upon the request history list (500, figure 7), and updated and replaced the cacheable data in the cache medium, in order to increase the hit ratio (col. 5 line 40 through col. 6 line 29, col. 6 line 64 through col. 8 line 49). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the network system of Humphrey in having a forecast server being able to issue the forecast on which data in the at least two cache server that should be replaced with other data in order to increase the hit rate in the at least two cache servers, as per teaching by the network system of Adrangi, because it increases the hit ratio in the cache medium and improves the network accessing speed.

Regarding claim 2, Adrangi discloses the network further comprising characterized in that the forecast server periodically is updated on which data that currently is stored in the at least two cache server (col. 5 line 40 through col. 5 line 29 and col. 7 line 30 through col. 8 line 23).

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Regarding claim 4, Humphrey discloses the network further comprising characterized in that the forecast server is connected to a group of cache servers, which is control via a control protocol (4 lines 55-67 and figure 2).

Regarding claim 5, Adrangi discloses the network further comprising characterized in that the forecast server has means for establishing a probability function for an address based on what other addresses were demanded a time period before and after the address was demanded (col. 5 line 40 through col. 6 line 50 and col. 7 line 5 through col. 8 line 49).

Regarding claims 6-7, Adrangi discloses the network further comprising characterized in that the forecast server is co-located with one of the at least two cache servers and one of the forecast servers is arranged to control the others (figure 2 and col. 2 line 35 through col. 3 line 6).

Regarding claim 8, Adrangi discloses the network further comprising characterized in that the forecast servers are arranged to exchange information on which data that is stored in the cache servers to which the forecast servers are connected (col. 2 line 35 through col. 3 line 6).

Regarding claim 9, Adrangi discloses the network further comprising characterized in that one of the forecast servers is arranged to control others (col. 2 line 35 through col. 3 line 6 and 2).

Regarding claim 10, the limitations of the claim are rejected as the same reasons set forth in claim 1.

Regarding claim 11, the limitations of the claim are rejected as the same reasons set forth in claim 2.

Regarding claim 13, the limitations of the claim are rejected as the same reasons set forth in claim 5.

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Regarding claims 14- 15, Humphrey discloses the network further comprising several forecast servers to which different cache servers or groups of cache servers are connected, characterized in that the forecast servers can exchange information on which data that is stored in the different cache servers or groups of cache servers, and one of the several servers is arranged to control the others (col. 4 line 55 through col. 5 line 63).

Regarding claim 17, the limitations of the claim are rejected as the same reasons set forth in claim 4.

Regarding claims 19 and 21, the limitations of the claims are rejected as the same reasons set forth in claim 5.

Regarding claims 22, 24-26 and 28-30, the limitations of the claims are rejected as the same reasons set forth in claims 6-7.

Regarding claim 31, the limitations of the claim are rejected as the same reasons set forth in claim 9.

Regarding claims 33-34, the limitations of the claim are rejected as the same reasons set forth in claim 5.

Regarding claims 35-36, the limitations of the claim are rejected as the same reasons set forth in claims 14-15.

5. Claims 3, 12, 16, 18, 20, 23, 27 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Humphrey (US PAT. 5,987,233) in view of Adrangi (US PAT. 6,651,141) as applied to claims above, and further in view of Datta (US PAT. 6,622,168).

Regarding claim 3, the combination of Humphrey and Adrangi differs from the claimed invention in not specifically teaches the network further comprising characterized in that the forecast server comprises means for ordering one particular cache sever of the at least two cache servers to pre-fetch data having a higher probability of being requested than the data that is currently stored in that particular cache server. However, Datta teaches a network system in figure 4 comprising a plurality of users (404 and 406, figure 4), and a Web/App Server (302, Figure 4), and a pre-loader (400, figure 4) wherein the pre-loader comprising a copponent cache (402, figure 4), cache manager (406), and cache replacement manager (404), in addition, the pre-loader is able to perform a pre-fetch function which predict the next co-related web pages or hint based upon the prior request web site, and further pre-fetching the data into the component cache from the profile server (300, figure 4) and (col. 11 line 51 through col. 12 line 4 and col. 13 line 13 through col. 14 line 50). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of Humphrey and Adrangi in having a network comprising characterized in that the forecast server comprises means for ordering one particular cache sever of the at least two cache servers to pre-fetch data having a higher probability of being requested than the data that is currently stored in that particular cache server, as per teaching of Datta, because it improves a web site's scalability.

Regarding claims 12, 16 and 32, the limitations of the claims are rejected as the same reasons set forth in claim 3.

Regarding claim 18, Humphrey discloses the network further comprising characterized in that the forecast server is connected to a group of cache servers, which is control via a control protocol (4 lines 55-67 and figure 2).

Regarding claim 20, Adrangi discloses the network further comprising characterized in that the forecast server has means for establishing a probability function for an address based on what other addresses were demanded a time period before and after the address was demanded (col. 5 line 40 through col. 6 line 50 and col. 7 line 5 through col. 8 line 49).

Regarding claims 23 and 27, Adrangi discloses the network further comprising characterized in that the forecast server is co-located with one of the at least two cache servers and one of the forecast servers is arranged to control the others (figure 2 and col. 2 line 35 through col. 3 line 6).

6. Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Humphrey (US PAT. 5,987,233) in view of Krishnan et al. (US PAT. 6,260,061 hereinafter Krishnan).

Regarding claim 1, Humphrey discloses a data communication network (20, figure 2), i.e., Internet broadcasting system, comprising at least two cache servers (25-25c, figure 2) to which users are connected, characterized by a forecast server (22, figure 2) connected to the at least two cache servers (col. 4 line 55 through col. 5 line 10). Humphrey differs from the claimed invention in not specifically teaches the forecast server being able to issue a forecast on which data in the at least two cache server that should be replaced with other data in order to increase the hit rate in the at least two cache servers. However, Krishnan teaches a manager (117, figure 1) functioning as the forecast server to issue a prediction on which data in the at least two proxy server that should be replaced with other data in order to increase the proxy cache hit rate to more efficiently utilizing the Internet access bandwidth (col. 2 line 44 through col. 4 line 49). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the



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invention was made to modify Humphrey in having the forecast server to issue the prediction on which data in the at least two proxy server that should be replaced with other data, as per teaching of Krishnan, in order to increase the proxy cache hit rate to more efficiently utilizing the Internet access bandwidth.

Regarding claim 2, Krishnan discloses the network further comprising characterized in that the forecast server periodically is updated on which data that currently is stored in the at least two cache server (col. 2 lines 11-27).

Regarding claim 3, Krishnan teaches the network further comprising characterized in that the forecast server (117, figure 1) comprises means for ordering one particular cache server of the at least two cache servers to pre-fetch data having a higher probability of being requested than the data that is currently stored in that particular cache server (col. 3 lines 25-51).

Regarding claim 4, Humphrey discloses the network further comprising characterized in that the forecast server is connected to a group of cache servers, which is control via a control protocol (4 lines 55-67 and figure 2).

Regarding claim 5, Krishnan teaches the network further comprising characterized in that the forecast server has means for establishing a probability function for an address based on what other addresses were demanded a time period before and after the address was demanded (col. 5 lines 16-55).

Regarding claims 6-7, Krishnan discloses the network further comprising characterized in that the forecast server (117, figure 1) co-located with one of the at least two cache servers (107, figure 1) and one of the forecast servers being arranged to control the others (col. 5 lines 44-55).

Regarding claims 8-9, Krishnan discloses the network further comprising characterized in that the forecast servers are arranged to exchange information on which data that is stored in the cache servers to which the forecast servers are connected, wherein one of the forecast servers is arranged to control others (col. 5 lines 4-25).

Regarding claim 10, the limitations of the claim are rejected as the same reasons set forth in claim 1.

Regarding claim 11, the limitations of the claim are rejected as the same reasons set forth in claim 2.

Regarding claim 12, the limitations of the claim are rejected as the same reasons set forth in claim 3.

Regarding claim 13, the limitations of the claim are rejected as the same reasons set forth in claim 5.

Regarding claims 14- 15, Humphrey discloses the network further comprising several forecast servers to which different cache servers or groups of cache servers are connected, characterized in that the forecast servers can exchange information on which data that is stored in the different cache servers or groups of cache servers, and one of the several servers is arranged to control the others (col. 4 line 55 through col. 5 line 63).

Regarding claim 16, the limitations of the claim are rejected as the same reasons set forth in claim 3.

Regarding claim 17, the limitations of the claim are rejected as the same reasons set forth in claim 4.

Regarding claim 18, Humphrey discloses the network further comprising characterized in that the forecast server is connected to a group of cache servers, which is control via a control protocol (4 lines 55-67 and figure 2).

Regarding claims 19-21, the limitations of the claims are rejected as the same reasons set forth in claim 5.

Regarding claim 22-30, the limitations of the claim are rejected as the same reasons set forth in claims 6-7.

Regarding claim 31, the limitations of the claim are rejected as the same reasons set forth in claim 9.

Regarding claim 32, the limitations of the claim are rejected as the same reasons set forth in claim 3.

Regarding claims 33-34, the limitations of the claim are rejected as the same reasons set forth in claim 5.

Regarding claims 35-36, the limitations of the claim are rejected as the same reasons set forth in claims 14-15.

### ***Response to Arguments***

7. Applicant's arguments filed 11/8/2004 have been fully considered but they are not persuasive.

In response to applicant's argument that Adrangi and Datta do not qualify as prior art, a copy of PCT/SE99/01050 is required to be submitted in order to determine whether PCT/SE99/01050 has an adequate support under 35 U.S.C. 112 for claims 1-36 of this

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application. The rejections under Humphrey in view of Adrangi, and Humphrey in view of Adrangi and Datta will be withdrawn if it is determined that PCT/SE99/01050 has the adequate support under 35 U.S.C. 112 for claims 1-36 of this application.

### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Krishnamohan discloses a method for improving data access time by predicting into a cache to minimize main memory time and cache size in a computer system (abstract).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zhuo H. Li whose telephone number is 571-272-4183. The examiner can normally be reached on Tuesday to Friday from 9:30 a.m. to 7:00 p.m. The examiner can also be reached on alternate Monday

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service whose telephone number is 571-272-2100.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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